



Arbiter Electronics

The following are excerpts of reviews printed internationally about the Arbiter Line of electronics by Dynaudio.

Review translated from "STEREO" Magazine, Germany, April, 1996

Amplifier and Preamp Review Translation
Truth by the truck load? by Matthias Bode

The truth, and nothing but the truth - that is the company motto of Danish manufacturer Dynaudio. The ultimate expression of this is the Arbiter line of amplifiers. The price is equally hard to top: \$200,000 dollars for the matched system (preamp and two monoblock amps).

Objects like Dynaudio's Arbiter amps, awesome in any respect you might think of, take some coming to terms with. For some - and I count myself among this number - they are a landmark of high end culture. For others, they are a nuisance. Too expensive, unnecessarily sophisticated; in one word, superfluous gimmicks which nobody can afford and which ultimately nobody needs, anyway. During the last few years, that was the tone of some of the comments I heard about these designs, which seem to have been taken beyond the level of what some think is reasonable.

Some of the blame might be laid at Dynaudio's door for their simple, but not unprepossessing contention that the Arbiter products are the best amplifiers in the world. Statements like that never fail to elicit opposition, negative feelings and polemics.

But the voice of the critics has gotten quiet. The general development of the high end is slowly approaching the position which had been marked by the Arbiter products. The landmark they formed by their very existence brought about a paradigm shift, changing forever the notions of what does and what doesn't make sense in the high end scene.

Taking a look without preconceived notions at this combination makes clear their importance. And we can see them for what they are. Their price and the dedication with which they have been built put them into a category of their own. No offense to you, dear reader, but I assume that neither of us really has to think about how to save up the money for the Arbiter. They are unreachable. Which is why I am writing completely without the intent, or the necessity, to "sell" you on these amps. Even a comparison to other amps or a rating in our list of recommendations is ultimately futile and doesn't make any sense. I'm reminded of the BMW advertising slogan, "Compare it? To what?".

These circumstances put this report into a somewhat unreal, unconnected area. Certainly outside of the usual review context. Like a work of art, these amplifier monuments have a greater effect on our minds than on the material world. Or do they?

Nobody can deny that the development of the high end market has been inflationary in practically all segments. Components costing tens of thousands of dollars find more than the occasional buyer. Even with accessories, ultra-expensive cables, AC line conditioners or burn-in CDS are everyday fare. Where people used to shake their head in disgust, they now show a genuine interest. Because the quality of music reproduction has made great advances. The extreme care and dedication pay off. Slowly but surely, the rest of the world is catching up with the Arbiter, which had pulled far ahead and still mark the apex.

Unexpectedly, it was not one of the big American manufacturers which led the way. That would have been unsurprising. But Danish loudspeaker specialist Dynaudio, a company which is very proud of its sophisticated, but never brash or aggressive speaker concepts and refrains from gigantomania - that was a surprise. Heeding the wisdom that what you make for yourself will turn out best, the Danes began the Arbiter project in the late '80s. With a lot of know-how and unlimited resources, they tackled the preamplifier first. The goal: building an ultimate preamp for use in developing loudspeakers, which would allow authoritative judgements of speaker developments. "We could never be sure what was the sound of the speakers and what the sound of the electronics", Dynaudio owner Wilfried Ehrenholz explains the rationale behind the project.

Knowing that the preamp is generally more difficult than the power amp, the preamp was given priority. Five years and 1.1 million dollars later, the result was ready for inspection. A preamp the like of which the world had never seen: the Arbiter consists of two parts, the preamp proper and an external battery power supply. It is no new discovery that a stable power supply is of supreme importance even for so-called small signal amplifiers. Dynaudio went to extremes here, giving 2.9 Farad to the Arbiter. Most power amps, sucking much more power from their supplies, have to make do with not even 1/10 of this value. Massive copper bars take care of current and voltage distribution and keep the power supply's output impedance low. By pushing a button, the owner can separate the preamp completely from its dependence on the AC power line and run it for approximately 15 hours from internal lead gel batteries. The complete circuit is dual mono. Amplification modules for line and phono inputs and the output stage each have their own voltage regulation, are tightly packed together to achieve short signal paths, and are ultra-compact. They work with a special integrated circuit which is specified by Dynaudio as having a working range into the multi-megahertz range.

Another example for the care and consideration spent on this preamp is the volume regulation. Since even highest-grade potentiometers have some channel discrepancies at the lower end of their working range, a stepped attenuator was considered too coarse and FET switches just didn't sound good enough to Dynaudio, the Arbiter is fitted with two separate logarithmic potentiometers from top manufacturer Penny & Giles. On each axis sits a second, linear potentiometer with the sole purpose of supplying a reference voltage. The voltage values are programmed into an EPROM. A precision step motor then adjusts the required volume over a range of 82 dB. The parts for this circuit alone cost a fortune.

We could fill a whole issue of HiFi Exclusive with a detailed description of the Arbiter's technology. But ultimately, what really counts is the sound. When I first heard this preamp three years ago, its sound literally took my breath away. It was so far ahead of any other preamp that the difference defied belief. Some of my colleagues - no less enthusiastic - doubted the validity of their experience and tried to find psychoacoustic tricks in the sophisticated Dane. Without success.

This small episode shows how upsetting this preamp was, and how great the advance over the rest of the world. We just couldn't believe that it was possible to gain so much by using this preamp. This landmark experience has stayed in my head ever since. Besides the opulent orgy of sound the preamp lets through, the greatest merit of the Arbiter must be that it made us question much of what was held as given before with a thoroughness we wouldn't have mustered without this extraordinary component. Its effect on "affordable" gear has been noticeable.

For example, it cannot be a coincidence that more and more manufacturers are discovering battery power supplies as the energy provider of choice. Whoever has heard, at a show, for example, where Dynaudio regularly demonstrates its amps, with his own ears the improvement effectuated by an isolation from the polluted, noisy AC power line will be able to see the validity of this unconventional idea. And therein - I can't emphasize this enough - lies the true worth of a project like this: questioning the status quo, initiating other projects. That this will serve to polarize opinions, lies in the nature of things and is no doubt beneficial.

Listening to the Arbiter is a singular experience - Dynaudio manufactures 8 to 10 sets a year for its affluent customers. And yet, there are very few components I know better than this preamp. For three years, my colleagues and I have used it as an incorruptible reference in our work, and for sheer musical enjoyment. Today, it works as flawlessly as on the first day. No wonder, because the construction is first-rate, too. Only the battery in the best remote I have ever encountered needed replacing. As all signal-carrying circuits are mounted in modules, a replacement, should it ever be necessary, will pose no problem.

I have less experience with the accompanying monoblock power amps. They were released about a year after the preamp and then went on a lengthy tour of dealers and shows. More than a short acquaintance had not been possible until just recently. This, however, proved highly impressive. Before you can enjoy them, you have to invest some considerable physical energy. Each monoblock weighs 150 kgs and can only be moved about by four men, using special handles. The power supply alone, containing two 2000 W ring transformers and gigantic filtering capacitors with a total value of 400,000 F, fills the middle section of the amps' slim upright and visually discreet chasis, and weighs in at 30 kgs. The amp treats positive and negative half waves completely separately. It, too, has a battery section, which at the push of a button will drive the input and driver stages which are situated right behind the input sockets. In Dynaudio's experience, this technology makes more sonic sense in the voltage amplification stages. Besides, a battery power supply for the output stage would have been beyond the scope even of the Arbiter project.

Despite the amplifier's physical dimensions, the signal paths are short. The bipolar power transistors, for example, were mounted on a compact cooling element folded around the driver module. Two very quiet fans allow this architecture. Two outputs with differing output impedances are available. The only concession to taste.

Otherwise, this combo rises way above all matters of taste. Being intimately familiar with the preamp's sound, I have to say that the power amps are not just a good match, they are the only logical choice.

I couldn't really appreciate, for example, how unlimited the dynamic range of the preamp really is, because all power amps I had driven with the Arbiter had lower limits and couldn't follow the preamp's output. I suspected as much, because the Arbiter allowed me to put the differences between power amps, in this and other respects, under a magnifying glass. Now I'm sure of it.

To talk at this point about trouser-flapping bass and lightning-quick transients seems cheap to me. While they are certainly present, this kind of language belongs to lesser components. The combination renders macro- and micro dynamics with superb accuracy. The lightest rubato of a singer's voice, subtle uncertainties of timing can be appreciated. Even though the power amp seems to have limitless power and doesn't hold back in using it, its precise liquidity will be obvious even at low loudness levels.

What is most fascinating to me is the energy and immediacy on offer here. Music "flows" free from all impediments and stumbling blocks. If I didn't know it is nonsense, I'd say the Arbiter let's you hear the bass content in an orchestral bell's tinkle, so full of impact is its reproduction. Big band recordings are a lasting experience, voices become personality profiles. Not all loudspeakers I used were capable of transmitting all that power through every octave, some turned mushy and deformed at higher levels. There were no such problems with Dynaudio's "difficult" Confidence 3. I suddenly understood how they came to make a loudspeaker with such a purist design, so vulnerable to system faults as this one. It's a natural consequence of working with the Arbiter.

Whether the combo's sound ultimately justifies the price I cannot decide. How good do amplifiers for a quarter million

dollars have to sound? As I said at the beginning, there's no need for us to think about it. Much more important seems to me the conclusion that these amps are monuments of sound, outposts far advanced into the infinite ocean of sound, lighting the way for the rest of the world. Photograph caption texts:

Like a monument before its unveiling: Dynaudio's Arbiter amps are making audio history.

The power amps' generous power supply sets new standards. There are two 2000 W transformers per side - one for each half wave. The massive copper bars linking the capacitors guarantee a low-loss power transfer.

The battery section of the power amp is responsible only for the input and driver stage.

A fan-cooled cooling block carries the driver and power section. The compact design keeps the signal path short and minimizes sonic losses.

The Penny & Giles precision potentiometer (blue ring) is operated by a step motor. This takes its reference voltage from a second potentiometer. Channel imbalances thus are no problem.

The aluminum metal remote mimics the control lay-out of the preamp. A smooth-running knob serves as the volume control. Even battery operation can be selected from your listening seat.

The preamp's amplification modules are situated right behind the inputs. The anterior part of the component is filled by filtering capacitors. Each module carries additional capacitors on its back.

Laboratory report:

Of course, we wanted to put the Arbiters through our measurement program. The preamp had excellent measurements throughout: THD and intermodulation are low at 0.001 and 0.025% respectively. Noise is forgettable, too: line 93, phono MM 90 and phono MC 76 decibels. All input impedances are sensible. The reproduction's intensity cannot be derived from these measurements, but there is one hint of the excellent sound staging and three-dimensionality: channel separation is 85 dB - a dream value. Since the power amps are configured as monoblocks, crosstalk is nil. Very impressive is their power. Continuous power into an 8 Ohm load is 709 Watts, rising to 1235 Watts into 4 Ohms. This should be sufficient for all possible combinations. The speed is indicated by the low TIM of 0.0004 %.

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Translated from "AUDIO" Magazine, Germany

REVIEW OF THE ARBITER PREAMPLIFIER BY DYNAUDIO

"You'll be hooked" by Claus Dick

"How does a company specializing in loudspeakers spend one million deutschmarks over 5 years? They build the most expensive and at the moment, best preamplifier in the world.

....Dynaudio's work makes sense: in order to enhance the already high standard of their loudspeakers, which they have been making for over 15 years now, the Danes have been experimenting for a long time with various amplifiers, signal sources and cables to design an in-house reference system that is as perfect as possible.

.... the Danish amplifier was in total command of the situation, knew no depth and width but depicted a room with far away boundaries, in which instruments and vocalists are clearly separated from each other and can be felt almost physically.

....with regard to tonal quality: whether we played Josu Carreras, Carol Kidd, or the choir from Bach's "Weihnachtsoratorium", without exception, the Arbiter lent the vocals a physical presence and basic warmth; the mids were reproduced with a plasticity unheard so far.

Thus, it was clear: the Arbiter represents the current state of the art in preamplifier design - which can hardly be expressed in points, due to the distance to the current reference unit, the Mark Levinson no. 26S."

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Translated from "HI FI VISION" (Germany)

REVIEW OF THE ARBITER PREAMPLIFIER BY DYNAUDIO

"Dynaudio Arbiter - a preamp in a class of its own."

by Matthias Bode

"...In the intro of "Diamonds On The Soles Of Her Shoes" from Paul Simon's "Graceland"-album (Amiga-pressing) you could almost hear the vocal chord vibrations of the singer. In fact we were fascinated, not only with this recording, but in general with the very subtle, lively yet firm, sound imaging from the Arbiter.

And thus we constantly found ourselves in the mood where you enjoy music, instead of focusing on trifles. Because the Arbiter, even if it is loaded with details, is no mere prissy bookkeeper.

...The more we listened to the Arbiter, the more blunt and primitive (sorry!) the Accuphase seemed.

To make things clear: The C-280V is an excellent preamp, only the Arbiter can do anything better. And it belongs, not only because of its price, in another class: The Arbiter Class."

To the point by Matthias Bode

"Normally HiFi research and development results are achieved step by little step. There has never been any doubt that small improvements in dissipation, imaging, and plasticity have been reached step by step. But major leaps ahead were never expected. We were therefore amazed about the gain in quality the Arbiter suddenly demonstrated."

To the point by Helmut Ulrich

"The Dynaudio masterwork enchants, and that is something else. My statement is that the loss between recording and reproduction has never been smaller."